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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,219	03/10/2004	Zuci-Tien Chao	250122-1400	4109

24504 7590 01/08/2007  
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP  
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ATLANTA, GA 30339-5948

EXAMINER
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DHARIA, PRABODH M

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/797,219

Applicant(s)

CHAO ET AL.

Examiner

Prabodh M. Dharja

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03-10-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 03-10-2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Response to Amendment***

4. The amendment filed 08-31-2006 does not introduce any new matter into the disclosure. The added material is supported by the original disclosure. **Status:** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged

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of papers submitted on 03-10-2004 and 08-31-2006 under a new application and amendments, which have been placed of record in the file. Claims 1-24 are pending in this action.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1,6,8,9, 14,16,17,22,and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawabe et al. (US 2003/0169247 A1).

Regarding Claims 1,9 and 17 Kawabe et al. teaches a driving circuit for outputting a video signal (page 2, paragraph 10, Lines 1-7) to control a liquid crystal display panel (page 1, paragraph 1, Lines 1,2) according to an image control signal provided by a host (page 3, paragraph 24, Lines 1-3, video signal is received from outside - a host), the liquid crystal display panel including a plurality of light emitting elements (page 1, paragraph 1, Lines 4,5) and display cells (page 11, paragraph 116, Line 4), the display cells respectively connecting to a plurality of data electrodes (page 11,12, paragraph 116, ) and gate electrodes, the driving circuit comprising: a gate driver outputting scan signals to the gate electrodes; a data driver outputting the video signals to the data electrodes (page 7, paragraphs 88-90) according to the image control signal (page 3, paragraph 24, Lines 1-3), and a voltage controlling signal corresponding to a brightness

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adjustment signal (page 2, paragraph 10, Lines 1-10, right side column, gray scale voltages controls the brightness) and a driving voltage generator outputting a driving voltage to the light emitting elements according to the voltage controlling signal (page 2, paragraph 10, Lines 1-11, Lines 1-10, right side column, gray scale voltages controls the brightness, page 6, paragraph 84, Lines 19-29) and a plurality of light emitting elements connected in serial (page 1, paragraph 1 and page 10, paragraph 104, a row of light emitting elements matrix type display are connected in series) and coupled to the driving voltage generator generating brightness corresponding to the driving voltage output by the driving voltage generator (page 2, paragraph 10, Lines 1-11, Lines 1-10, right side column, gray scale voltages controls the brightness, page 6, paragraph 84, Lines 19-29).

Regarding Claims 6,14 and 22, Kawabe et al. teaches the light emitting elements comprise a plurality of LEDs connected in serial, parallel, or a combination of both, and a first terminal coupled to the driving voltage generator and a second terminal coupled to the data driver (page 1, paragraph 1)

Regarding Claims 8,16, and 24, Kawabe et al. teaches a load coupled between the second terminal and ground (page 7, Paragraph 87-89).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-5,7, 10-13,1518-21 and 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabe et al. (US 2003/0169247 A1) as applied to claims 1,6,8,9, 14,16,17,22,and 24 above, and further in view of Sono (US 2003/0117361 A1)..

Regarding Claims 2-5,7, 10-13,1518-21 and 23, Kawabe et al. fails to recite or disclose the voltage controlling signal comprises a plurality of square waves having periods of high voltage level and low voltage level; the data driver adjusts the ratio between the periods of the high voltage level and the low voltage level according to the brightness adjustment signal; the driving voltage generator comprises: a switch having a control gate receiving the voltage controlling signal and turned on or off according to the voltage level of the voltage controlling signal; an inductor coupled between the switch and a power source; a diode (switch) coupled between the switch and the inductor; and a capacitor coupled to the diode, wherein the connection point of the capacitor and the diode outputs the driving voltage; the level of the driving voltage is generated according to the ratio between the periods of the high voltage level and the low voltage level; and the data driver adjusts the ratio between the periods of the high voltage level and the low voltage level of the voltage controlling signal according to the voltage level of the second terminal. However, Sono teaches the voltage controlling signal comprises a plurality of square waves having periods of high voltage level and low voltage level (pages 1,2, paragraphs 12,13); the data driver adjusts the ratio between the periods of the high voltage level and the low voltage level according to the brightness adjustment signal (pages 1,2, paragraph

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12,13, pages 2,3, paragraph 32); the driving voltage generator comprises: a switch having a control gate receiving the voltage controlling signal and turned on or off according to the voltage level of the voltage controlling signal; an inductor (it is obvious as a model of OP-amp would show a built-in inductor) coupled between the switch and a power source; a diode (switch) coupled between the switch and the inductor; and a capacitor coupled to the diode, wherein the connection point of the capacitor and the diode outputs the driving voltage (page 3, paragraphs 38-41); the level of the driving voltage is generated according to the ratio between the periods of the high voltage level and the low voltage level (pages 1,2, paragraph 12,13, pages 2,3, paragraph 32); and the data driver adjusts the ratio between the periods of the high voltage level and the low voltage level of the voltage controlling signal according to the voltage level of the second terminal (pages 1,2, paragraph 12,13, pages 2,3, paragraph 32). The reason to combine Sono teaches specifically square wave variable amplitude and variable frequencies per brightness requirement of the LCD, which helps reducing change in luminance; reducing screen blinking; minimizes flickering and achieves better resolution display (see abstract and page 2, paragraph 14, page 1, paragraph 11, page 4, paragraph 44). Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Sono in the teaching of Kawabe et al. to be able to have LCD, with reduced change in luminance; prevented screen blinking; minimized flickering and achieves better resolution display by driving a LCD display with square wave consisting of variable amplitude and variable frequencies per brightness requirement of the LCD (see abstract and page 2, paragraph 14, page 1, paragraph 11, page 4, paragraph 44).

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Odryna et al. (6,333,750 B1)\ Multi-sourced video distribution.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668.

The examiner can normally be reached on M-F 8AM to 5PM.

11. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

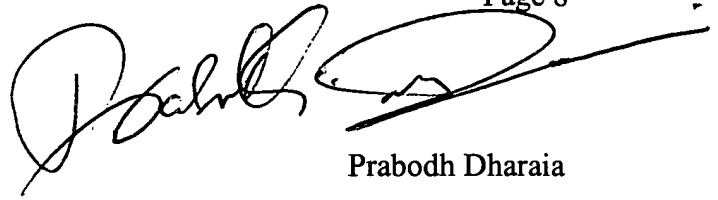
Washington, D.C. 20231



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A handwritten signature in black ink, appearing to read 'Prabodh Dharaia', with a long horizontal stroke extending to the right.

Prabodh Dharaia

Partial Signatory Authority Program

AU 2629

December 22, 2006